ABSTRACT OF THE DISCLOSURE

Disclosed is a bandwidth allocation device and a dynamic bandwidth allocation method wherein an Ethernet frame is used for upstream/downstream transmission between an OLT and ONUs, the amount of bandwidth requested by the ONUs is reserved in advance based on class of service using an upstream frame, and, as a grant operation in response to these requests, a bandwidth allocation is dynamically performed to guarantee the QoS of each service. The OLT includes an MPCP allocator, and the ONU includes an MPCP requester. The MPCP allocator includes a class-based queue state counter and a grant generator. Upon receipt of a REPORT from a MAC control layer, this counter differentiates the ONU and obtains class-based queue length information of the ONU. When queue state information of all ONUs is obtained through the counter, the grant generator generates a service-based bandwidth for each ONU, and transmits a GATE. The MPCP requester includes a class-based buffer counter and a request generator. Upon receipt of the GATE from the grant generator, the buffer counter counts a class-based buffer length. The request generator generates class-based buffer length information, and transmits the REPORT containing the generated information.